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PROFESSIONAL 2 WAY action radio

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TO: ALL REGENCY COMMUNICATIONS PROFESSIONAL SALES AND SERVICE CENTERS
ALL REGENCY COMMUNICATIONS PROFESSIONAL SALES REPRESENTATIVES

MODEL AFFECTED: MCCE01R REPEATER

SERVICE MANUAL CHANGES:

1. The maximum number of CTCSS tones which may be installed in the MCCE01R repeater was misstated. Up to eleven CTCSS tones may be installed with the addition of two Tone Extender Panels, MA-306. Each panel accommodates four CTCSS tones.

2. The proper crystal specifications were not included in the manual. Find attached the crystal specifications:

   Transmit - 304-375
   Receive - 304-439

3. Service information on the noise and CTCSS tone squelch operation of the repeater was omitted. The information is contained below:

   1-5 Operation by Local Operator

   c. Noise and CTCSS Tone Squelch

   When the microphone is placed in its grounded hang-up clip, the only signals that will be heard at the speaker are those encoded with the selected CTCSS tone and of sufficient RF strength to open the noise squelch.

   When the microphone is off-hook all channel activity will be heard at the speaker.

In the Test Procedure add Section X.

AD307

X. ADJUSTMENT PROCEDURE WHEN CONFIGURED FOR NOISE AND CTCSS SQUELCH OPERATION

A. Noise and CTCSS Tone Squelch Functional Test

1. Connect JU718 (yellow) to P707.
2. Remove A2-A3 jumper on P705.
3. Clip R762 (33K resistor between P1 and K7 next to the CTCSS decoder plug). LD701 should glow. The transmitter should be controlled by the squelch control and should be activated when the control is fully clockwise and off when fully counterclockwise.
4. Replace the clipped 33K in the unused decoder position.

B. Noise and CTCSS Tone Squelch Installation

1. Connect JU718 (yellow) to P707.
2. Clip the 33K resistors (R762-765) only for those decoder plugs into which a decoder will be installed.
3. Set each CTCSS Encoder and Decoder on frequency per Section X. The encoders and decoders are paired, meaning that the detection of the decoder frequency causes the transmitter to be modulated with the paired encoder frequency as follows:

Connect JU703 (blk) to	Encoder	Decoder
S13	P705	P706
S14	P703	P704
S15	P701	P702

A decoder must be installed in P706 or no audio will be heard at the local speaker and no audio will be transmitted. Install encoders and decoders.

4. All on-channel communications will be monitored by the local speaker when the microphone is removed from its grounded hang-up clip. If the microphone remains in its grounded hang-up clip, only communications with the CTCSS decoder frequency selected by JU703 (black wire) will be monitored by the local speaker. Connect JU703 to the test pin for the encode-decode pair under test per the above listing.
5. Set encoder deviation. Set RF signal generator to -130dBm. While the microphone remains in its grounded hang-up clip, depress its PTT switch. Adjust R618 on the selected encoder for $\pm$500 Hz deviation.
6. Repeat Steps 4 and 5 for each used encoder position.

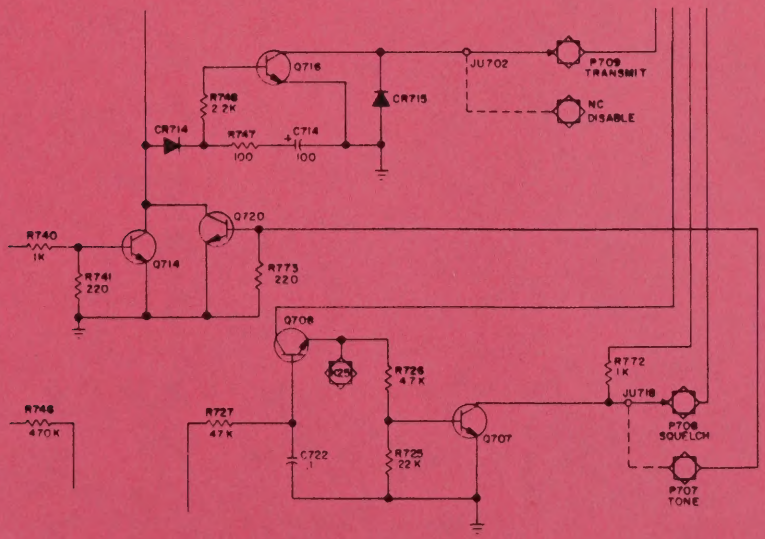
7. Set decoder threshold. Modulate RF signal generator with desired CTCSS tone at ±300 Hz deviation and at a signal strength of -100dBm. Place microphone in its grounded hang-up clip. Adjust R612 on the decoder under test to just open the tone squelch. Change deviation to ±200 Hz. Tone squelch should not open. If adjustment is required, recheck ±300 Hz deviation. Repeat for each installed decoder.
8. Set the squelch control. Modulate the RF signal generator with the test CTCSS tone at ±500 Hz deviation. Remove the microphone from its grounded clip and adjust the squelch control per step VII.D.

4. In the Circuit Description section under IV - Repeater Control Circuits, add the following:

C. Transmitter Activation by Noise and CTCSS Tone Squelch

The transmitter is keyed only when a signal is received of sufficient strength to open the noise squelch and is also encoded with the proper CTCSS tone. This "AND" function is realized by Q709 and Q720. The detection of the tuned CTCSS frequency results in the K7 output of a decoder to be 0 VDC which causes several events. Through Q706 and Q705 the S13 voltage is also 0 VDC so the LED LD703 glows. The CTCSS encoder output is switched to the modulator thorugh the diode switch formed by CR709-711. The C7 line is pulled low saturating the Q709 switch. If the received signal is not of sufficient strength to open the suqelch, Q707 is off and Q720 is on, which keeps Q716 off so the transmitter is not keyed. If the squelch is open, Q707 os on; Q720 is off so that Q716 is on and the transmitter is keyed. The Three-Minute Timer functions as described in the Noise Squelch description.

Add to Schematic 704-166:

Q720 - 4801-0000-010 SPS-952
R773 - 4704-0221-032 220 ohm 1/4W 5%

All manufactured repeaters include these parts.